DOCUMENT RESUME

ED 175 341 HE 011 645

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TITLE A Catalog of Basic Elements of College-Level Instruction. EAC Reports 79-18.
INSTITUTION Washington Univ., Seattle. Educational Assessment Center.
REPORT NO EAC-79
PUB DATE Jun 79
NOTE 54p.
AVAILABLE FROM University of Washington, Educational Assessment Center, 1400 Campus Parkway, PB-30, Seattle, WA 98195

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Achievement; *College Curriculum; College Faculty; *College Instruction; *Curriculum Design; *Curriculum Evaluation; Delivery Systems; *Educational Objectives; Evaluation Methods; Higher Education; Instructional Materials; Standards; Student Teacher Relationship; Teacher Evaluation
IDENTIFIERS *Outcomes

ABSTRACT

Designed to assist academic units in specifying quality instruction, the catalog is composed of elements of instruction, organized into four major categories: instructional plan, delivery, evaluation, and student outcomes. The instructional plan is sub-categorized into the following areas: content, objectives, materials, assignments, and strategies. The delivery category is divided into presentation, affective characteristics, and interaction. The evaluation dimension explores both student performance and instructional effectiveness. Student outcomes refers to changes in students as a result of instruction and is sub-categorized into intellectual, non-intellectual, and physical skill areas. For each of the elements within a sub-category a definition and examples of desirable and undesirable behavior or performance are provided. An overview of the catalog, suggestions for potential use, and six areas of the catalog in need of further development are provided. (PHR)

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Educational Assessment Center

University of Washington

June, 1979

79-18

A Catalog of Basic Elements of College-Level Instruction[1,2]

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Abstract

Basic elements of college-level instruction are listed within four major categories: Instructional Plan, Delivery, Evaluation, and Student Outcomes. Included with each element is a definition and examples of usually desirable and undesirable teaching behaviors or outcomes. Suggested uses for the catalog include facilitation of the specification of quality instruction by academic units, of the process whereby teaching is evaluated, and of activities in support of improvement.

Project #223

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A Catalog of

Basic Elements of College-Level Instruction

Gerald M. Gillmore and Dean M. Hofland

Introduction

The catalog which follows this introduction is composed of a categorized list of "elements" of both instructional process and outcomes. The fundamental purpose of the catalog is to assist academic units in specifying what for them constitutes quality instruction. This specification can be an important early step in building a valid and useful system for first evaluating and then improving teaching. To evaluate we must specify what we consider to be excellent or good instruction. If we are unable to recognize what is good, or at least what is better, we will not be able to make judgments of goodness, either absolute or relative. Furthermore, for instruction to be improved, through reward or support, it must be evaluated. We have to know what is superior to effectively reward excellence, we have to know what is less good to effectively support improvement. Following an overview of the catalog, we suggest potential uses, focussing on how the catalog might directly facilitate specification, evaluation, and improvement activities. The introduction concludes with a discussion of where we believe further development and elaboration is needed.

Overview. The catalog is composed of what we have chosen to call "elements" of instruction. Our goal was to make the list of elements as complete as possible and applicable to a variety of instructional techniques (e.g., lecture, discussion, self-paced study). These elements are organized into

four major categories; instructional plan, delivery, evaluation, and student outcomes. The first three dimensions relate to instructional process; the fourth relates to results or products. There are from two to five sub-categories within each category. Within these sub-categories each element is briefly defined and "usually desirable" and "usually undesirable" examples of behavior or performance are provided. We will discuss each of the major categories in turn.

The Instructional Plan relates to those activities of a teacher which take place prior to meeting with the class. In the evaluation of teaching effectiveness, instructional planning often receives little direct attention, perhaps because many aspects of it are less readily observable than the delivery of the instruction. It is, nonetheless, an important dimension of the instructional process, and one which should not be ignored. In fact, because planning receives so little systematic attention it may be the area where the greatest potential for instructional improvement exists.

The sub-categories within the Instructional Plan dimension are as follows:

Content -- the specific subject-matter and the sub-topics to be covered in the class.

Objectives -- that which is intended to be accomplished by the conduct of the class.

Materials -- textbooks, programmed materials, films, etc., to be used as a means of conveying the subject matter to students.

Assignments -- readings, projects, papers, etc., required of students which are generally completed outside of the classroom.

Strategies -- selection of instructional methods or approaches used to accomplish course objectives.

Delivery refers to those activities which take place in the classroom, excluding the evaluation of student progress. It is easy to think of delivery as limited to lecturing; however, we considered it more broadly to include class discussions, student questions, films, etc. In fact, in some course structures, delivery may consist mainly of student interactions with materials (e.g., self-paced courses).

Some might wish to define this dimension alone as teaching; and, of course, little argument needs to be made of its importance. We would claim that for all but a highly gifted few, careful planning is necessary

but not sufficient for effective delivery. One can know what to do and still not do it well.

The sub-categories of the Delivery category are as follows:

Presentation -- the process by the instructor of explaining course content, assignments, etc., to students in oral, written or graphic form.

Affective Characteristics -- inter-personally oriented teacher behaviors and attitudes.

Interaction -- the exchange of ideas, questions, experiences, etc., among students and between the students and the teacher.

Evaluation refers to assessments of student and teaching performance which are made as part of the instructional process. Activities within this dimension take place while the course is in progress as distinguished from student and teaching performance assessment for evaluating the course, which often takes place after the course is over.

Evaluation of student performance is necessary for grading purposes. It is also necessary as a source of feedback concerning the extent to which planned objectives are being met through the delivery of instruction. This assumes, of course, that evaluation methods are consistent with the objectives, as they should be. Nowhere are objectives more loudly proclaimed to students than in the manner by which the teacher evaluates performance.

The following two sub-categories are included within the evaluation dimension:

Student Evaluation -- the process of assessing student learning for feedback to students and grading.

Instructional Evaluation -- assessment of the effectiveness of the instructional process for modifying the instructional plan.

Student Outcomes refers specifically to changes in the students as the result of instruction. We have chosen to consider these changes as learning, and we categorized learning into three sub-categories.

Intellectual -- learning which emphasize remembering, recalling, solving problems, creating or re-ordering material, etc., through a conscious thought process.

Non-intellectual -- learning which emphasizes non-cognitive components such as feelings and attitudes.

Physical skill -- learning oriented toward muscular skills.

The elements within each of the student outcomes sub-categories are considered to be hierarchical; that is, simpler outcomes need to be accomplished prior to accomplishment of more complex outcomes, and elements are listed from simplest to most complex.

A clear separation of intellectual processes from either nonintellectual of physical skill learning is very difficult at the present state of the art. However, each of these three areas are applicable to certain areas of instruction within the University. Outcomes of an intellectual nature are what we most commonly think of as typical classroom learning situations. Non-intellectual outcomes are not often included as objectives for a course; in fact, there may even be a good deal of reluctance on the part of academic communities to include these as legitimate course objectives. However, some objectives are appropriately of this nature for many courses. For example, an instructor may legitimately hope that the students will learn to enjoy the study of the course content or a music instructor may intend for students to get greater satisfaction from listening to various forms of music. The teaching process can include planning oriented toward non-intellectual attainments by students and assessments of the extent to which these are accomplished.

Physical skills are also an important or even a major part of the instructional goals of many courses. Dance and physical education are obvious areas which contain courses emphasizing physical skills. In addition, many classes in science and medicine require students to skillfully manipulate instruments. For example nurses must be able to give injections. Physiologists must develop complex surgical skills.

Suggested Usages. Our goals for the catalog--specification, evaluation and improvement--are indeed ambitious. We recognize the complex and multifaceted nature of teaching, learning, and the interaction between the two and sense the hazards surrounding prescriptions for effective teaching. Such prescriptions can lead to over-specification, too little attention to teacher-learning differences, and even a stifling of healthy creativity. Our strategy for avoiding these dangers is inherent in the idea of a catalog. One is not expected to select everything one sees but rather to pick and choose. Academic units or teachers should be able to select relevant elements from each of the four major categories but no teacher or academic unit will find all the elements equally valued or even applicable for the entire unit or for a specific course. For an academic unit to specify excellence it has to establish consensus on the relative value of each of the elements for the unit in general and perhaps

for each course. Judgments of the value of the various elements are fundamental to any use of this catalog. With this in mind, we now turn to four potential uses which we see the catalog as having.

1. The catalog can be used as a guide or model for the conduct of a course by a particular instructor. The catalog emphasizes the planning process, for example. The instructor might check the elements which are included in this section as a self-assessment of his/her planning for the course. Perhaps certain elements have been neglected to the detriment of the course. The Delivery and Evaluation sections of the catalog can be used similarily. Additionally, should one solicit help from a colleague in evaluating and improving one's course, the catalog could be used as a guide for the colleague in classroom observation, examination of course materials and tests, etc.

Although Student Outcome category is placed last in the catalog, it should be consulted early and often in the instructional planning phase. The outcomes which are sought by the instructor should be the focus of the planning and delivery of the course and the assessments of students.

2. Academic units can use the catalog as a means for arriving at a consensus for specifying "good" teaching. Techniques from Decision-Theory may be employed such that the entire faculty determines the weights assigned to categories and sub-categories. Individual instructors might, then, assign weights to the elements in appreciation of the idiosyncracies of their teaching style, the course, and the students. This would allow the academic unit to define the relative importance of the broad dimensions of teaching while allowing the individual freedom in how those broad dimensions are achieved. An important result of this process would be a means whereby units can communicate values and expectations with respect to teaching to the instructional faculty. A secondary benefit is that specifying good teaching in this manner can provide a common language helpful in discussions of teaching. A third benefit is that it provides the department with criteria for the evaluation of teaching, which leads us to our third possible use.

3. A set of agreed-upon criteria for effective teaching is necessary for the successful evaluation of teaching. However, for a complete evaluation system, valid methods need to be established for assessment of the

quality of the performance of each of the valued elements and standards need to be determined against which the adequacy of the performance is quantified. Importantly, by letting individual faculty and academic units become instrumental in specifying good teaching, in setting standards, and perhaps even in deciding which measures are valid for a particular element, critical decisions which must be made in building an evaluation system are brought close to where the instruction actually takes place. Furthermore, the burden of making these decisions is removed from college-wide administrators, who are generally ill-equipped and ill-advised to decide these matters. Nor then is there any necessity for imposing a uniform set of criteria on an entire campus, criteria which may not be applicable to many particular units. The catalog can assist immediately in the specification process. Choice of standards and methods will be discussed in the Further Developments section.

4. If an evaluation process like that described above were in place, the logical first step in improving instruction would be an immediate spinoff. Elsewhere we have argued that instructional improvement efforts should begin with determination of the strengths and weaknesses within a course. Improvement efforts then can be oriented toward the weaknesses. The strenghts do not need attention (Gillmore and Clark, 1977). The system outlined above if implemented would make explicit the value of each element and the quality of its performance and would allow focus of improvement efforts on whose elements which are both highly valued and poorly performed.

Further developments. The catalog, by its very nature, should not be thought of as a fixed, unchanging entity. As it is put into actual use, new elements will need to be added, others re-combined, and some possibly deleted. Even so, the catalog as it presently stands can profit from further development and elaboration along six identifiable lines.

1. One way to view the catalog is as a model of teaching. We have drawn attention to certain aspects of the teaching process at the exclusion of many others. In essence we have said the former are important, the latter can be overlooked without serious consequence. Obviously, then, a theory and a philosophy of teaching guided our choices. For example, we have assumed that the primary goal of instruction is learning, which we have broadly defined as being intellectual, non-intellectual

(attitudes, interests, etc.), and/or physical (skills) in nature. But, teaching and learning are not synomous or interchangeable concepts. The students play an important role in learning along with the teacher, and perhaps of greatest importance is the interaction between the teacher and the student(s). Learning occurs when the student is actively involved in the teaching-learning process. Teaching often effects learning indirectly by motivating, directing and involving the student. These theoretical and philosophical underpinnings need to be more thoroughly and deliberately specified.

2. There are empirical data suggesting the importance of many of our elements and all or almost all can be tied to the "accumulated wisdom" professed by writers in the field. A great deal of reading preceded our first written word. Of particular relevance are the taxonomies of educational outcomes developed by Bloom (1956), Krathwohl et al. (1964), and Simpson (1966). We were more than influenced by these seminal works; we liberally borrowed from them. In further development, we need to make the empirical ties explicit, where they exist, and to offer intelligent critique of the empirical literature where it is relevant to do so. We furthermore need to make the sources and nature of the influences on our work explicit.

3. As mentioned earlier, if the catalog is to be used within a complete evaluation system, valid methods for assessing the performance quality of the various relevant elements need to be specified. In some cases, student ratings may provide adequate information. To do so, however, the student ratings system may have to be restructured. In other cases we may have to appeal to judgments from content or method experts. Some elements will require examination of student performance measures. It is not clear that adequate technology is currently in place to provide satisfactory measurement procedures for all of the elements. Study needs to be made of this issue, and further research and development may be necessary.

4. Once measures are developed and/or chosen, decisions will need to be made relating to performance standards. Presuming these standards will be based on absolute performance, not performance relative to a norm group, what will be considered minimally acceptable? What will be considered excellent? Probably the measures adopted for the system will have to include scale points which are defined by specific behaviors. We have made

a beginning in this direction by our inclusion of usually desirable and usually undesirable examples. However, these are written primarily to help clarify the corresponding element rather than to define anchor points. Procedures will need to be developed for the standard-setting process.

5. In using the catalog, we have emphasized the necessity of placing differential weights on the various elements, depending upon the values of the academic unit and of the instructor, and upon the structure of the course. We suggested that a way to allow some uniformity of definition by the academic unit and also some flexibility by the teacher was to allow the former to place weights on the major categories and sub-categories, and the latter to place weights on the elements within the sub-categories. At this stage of development of our thinking this procedure is little more than a guess. Undoubtedly the decision-making literature will prove a valuable aid in development of procedures for the assignment of weights.

6. Finally, to make the most effective use of the catalog and any available extensions, example usages and case histories need to be supplied. To a limited extent, at least in the early developmental stages, these can be invented. However, ultimately real cases will prove much more valuable for learning how the catalog can be best used and in making modifications. Thus, at some point we need cooperating instructors and, even better, academic units to make trial uses.

ELEMENT	DEFINITION	EXAMPLES: USUALLY DESIRABLE	EXAMPLES: USUALLY UNDESIRABLE
I. INSTRUCTIONAL PLAN			
I-A CONTENT	the specific subject matter and sub-topics to be covered in the course		
I-A-1 Breadth	coverage of the entire content domain defined for the course	(1) students are introduced to all of the important topics within the given content area	(1) skills or content which are needed for subsequent courses or successful professional performance are not included (2) topics are included which are at best tangential to the course
I-A-2 Depth	coverage of material at an appropriate level of complexity and thoroughness	(1) students are introduced to material at a complexity level consistent with their background and the course purpose (2) the instructional plan includes thorough coverage of important topics through course materials, assignments, lectures, etc.	(1) the planned coverages of certain topics is too superficial given the requirements of subsequent courses or successful professional performance (2) planning leads to inappropriately complex coverage of content, given the level of the course and/or the students (3) too much time is sent on certain topics allowing only superficial coverage of other important topics
I-A-3 Pre-requisite knowledge	consideration of student knowledge and ability upon entering the course	(1) course content is planned which takes into account listed course pre-requisites and reasonable student entering abilities and knowledge	(1) content is included which all or most students already know (2) content is included which requires knowledge which students cannot be expected or do not possess

ELEMENT	DEFINITION	EXAMPLES: USUALLY DESIRABLE	EXAMPLES: USUALLY UNDESIRABLE
I-A-3 (continued)		(2) content coverage is altered if the actual incoming knowledge and ability of most students is greater or less than anticipated (3) opportunities are provided which enable certain students to strengthen weak background knowledge	
I-B OBJECTIVES	that which is intended to be accomplished by the conduct of the course		
I-B-1 Appropriateness	validity of the objective given the overall goals of the course	(1) objectives for the course are consistent with the overall goals of the course as specified by the relevant curriculum committee or college catalogue (2) accomplishment of course objectives will result in accomplishment of overall course goals	(1) the complete set of course objectives leaves important overall course goals untouched (2) certain course objectives are unrelated to overall course goals
I-B-2 Specification	clarity with which the objectives are specified	(1) objectives are carefully thought out and are either clearly written or can be clearly articulated by instructor if called upon to do so	(1) the instructor is unsure of what is intended to be accomplished in parts of the course (2) little careful thought is put into what student outcomes the course is intended to be oriented toward

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
I-B-3 Focus	the extent to which objectives are oriented toward desired student outcomes	(1) objectives are explicitly stated in terms of the desired student learning (see sect. 4.0.0)	(1) objectives are stated in terms of the teaching process (2) objectives are stated in terms of the content to be covered
I-B-4 Type	the nature of the objectives vis a vis the three major outcome categories (intellectual, non-intellectual or physical skills (see sec. 4.4.0 for definition of these types of objectives)	(1) objectives seem to be specified toward the appropriate type(s) given the content of the course, (i.e., music appreciation course has both intellectual and non-intellectual objectives)	(1) objectives do not include non-intellective outcomes, although the goals of the course would seem to require them (2) objectives seem to be overweighted with physical skill type
I-B-5 Level	level of skill, intellectual process, and/or non-intellectual process required to meet the objectives	(1) a number of different levels for intellectual, non-intellectual, and/or physical skill accomplishments are included in the objectives, e.g., students are expected to be able to recall, comprehend, and analyze course materials (2) the level of expected functioning of students in and subsequent to the course is appropriate given the level of the students upon entering the course (e.g., expectations are	(1) objectives only include low level outcomes; e.g., students are only expected to be able to recognize or recall facts or values, or skills, presented in class, without necessity for higher order intellectual, non-intellectual or skill levels (2) objectives only include very high level outcomes, without proper specification of lower level outcomes which lead to the higher and without objectives which are reasonable to expect many students

ELEMENT	DEFINITION	DESIRABLE	UNDESIRABLE
I-B-5 Level (continued)		higher for graduate student classes, lower for Freshman level	to obtain
I-C MATERIALS	text books, programmed materials, films, etc., to be used as a means of conveying the subject matter to the students		
I-C-1 Relevance	the relationship between the course materials and the course objectives	(1) materials seem logically related to course objectives	(1) many of the materials selected seem to have no logical connection to the objectives of the course
I-C-2 Adequacy	the extent to which materials used, along with other course components, will allow students to meet course objectives	(1) materials will make a distinct contribution to achieving course objectives (2) course materials are provided which relate to all course objectives	(1) There are important course objectives for which no materials are made available to students
I-C-3 Quality	when compared to available materials the extent to which the selected materials are interesting and appropriate	(1) materials selected are the best available	(1) materials are dull and sometimes inaccurate. Materials are out-dated.
I-C-4 Availability	the accessibility of the selected materials to the students for use outside of the class	(1) materials are available to students when needed	(1) students have an extremely difficult time getting access to materials
I-C-5 Timing	advanced preparation of such materials as transparencies,	(1) materials are available to students and instructors at	(1) frequently, visual aids and mimeo materials are not ready when

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
I-C-5 Timing (continued)	mimeographed information etc., so that they are available for appropriate class sessions	the appropriate time for their use	they are needed, or are hastily prepared immediately prior to the class period
I-D ASSIGNMENTS	reading, projects, papers, etc. required of students outside the classroom		
I-D-1 Directions	the manner with which directions for completing assignments are communicated to students	(1) directions are clearly written and distributed to class members (2) the instructor gives explicit oral instructions	(1) written directions create many questions about what is actually required (2) in the absence of written directions the instructor gives poorly thought out directions orally
I-D-2 Level	the intellectual, non-intellectual or skill level involvement necessary to complete the assignments (see sect. 4.0.0)	(1) assignments are designed to help students achieve the level of intellectual non-intellectual or physical skill specified in the objectives	(1) intellectual involvement required in completing the assignments is inconsistent with the course objectives; e.g., completing assignment requires rote drill and practice while objectives emphasize creative behavior
I-D-3 Coordination	synchronizing of assignments with other components of the course (e.g., class presentations) in terms of relevance and timing	(1) assignments are timed to coincide with lecture and discussions	(1) assignments require background not covered till later in the course

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
I-D-4 Student effort	amount of work required of the students in relation to the credit allowed for the course objectives	(1) the amount of work is consistent with the credit allowed for the course (2) assignments are used effectively to help students meet course objectives	(1) it is impossible to complete assignments in the time allotted for the course (2) students get little opportunity to practice learning or develop skills (3) students are not required to interact with class material outside of class
I-E STRATEGIES	selection of instructional methods or approaches used to accomplish course objectives, e.g., lecture, discussion, self-paced modules		
I-E-1 Relevance	the consistency between course objectives and the teaching strategies planned to attain them	(1) the approaches selected appear to allow a good chance for achieving the course objectives	(1) the approach selected appears to hold almost no hope of achieving the course objective
II. DELIVERY			
II-A PRESENTATION	the process by which the instructor explains course content, assignments, etc., to students in oral, written or graphic form		

ELEMENT	DEFINITION	EXAMPLES	
		DESIRABLE	UNDESIRABLE
II-A-1 Explanation of objectives	providing students with a rationale for the objectives of the course	(1) the instructor provides a clear specification of objectives to the student with reasons for their choice and importance	(1) no mention is made of the course objectives (2) objectives are listed without any rationale behind their choice (3) students have little idea of the objectives of the course
II-A-2 Review	brief examination of material from previous classes which is necessary to the understanding of the current lesson	(1) the instructor provides a brief review of previously learned material relevant to the current class material	(1) no review is conducted
II-A-3 Pace	the rate with which material is covered in class sessions (does not apply to self paced courses)	(1) pauses are incorporated for note taking (2) important points are highlighted	(1) material is covered too rapidly to take notes (2) students are not made aware of important points
II-A-4 Flow	the integration of the course topics and transition from one topic to another	(1) the instructor makes smooth transitions from one topic to another or from one reading to another (2) materials are organized such that each topic flows naturally from prior topic or transition to the next (3) the instructor provides interesting introductions to new material	(1) no attempt is made to tie topics together in a logical fashion (2) new topics are introduced abruptly and with inadequate transition

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
II-A-5 Planned explanations	the explanations of concepts which the instructor has an opportunity to plan	(1) explanations either oral or written are given which can be understood by students	(1) explanations are confusing
II-A-6 Unplanned explanations	explanations which result from student questions or other indicators of puzzlement	(1) the instructor is able to provide coherent explanations in response to student questions (2) where student appears confused, instructor is able to use an alternative clarifying explanation	(1) the instructor seems to be unable to provide explanations except those prepared in advance (2) answers to questions and alternative explanations seem to be mere reiterations of the original explanations
II-A-7 Demonstrations	illustrations of techniques or phenomena by the instructor or through films or other media	(1) demonstrations are well prepared and effectively presented	(1) demonstrations/examples are often inappropriate or poorly presented
II-A-8 Audio-visual	the manner in which A.V. materials are used	(1) A.V. materials are relevant to subject matter and objectives (2) adequate introduction and discussion of A.V. presentation is carried out (3) the instructor is adept at using A.V. instruction techniques such as transparencies and blackboard (4) equipment is arranged for and checked out in advance	(1) A.V. materials such as films and slides are used to fill classroom time only (2) films and other presentations are never introduced or discussed (3) the instructor is unable to use instructor aids effectively (4) frequently equipment is not available when needed or does not work properly

ELEMENT	DEFINITION	DESIRABLE	UNDESIRABLE
II-A-9 Application	relating course material to new situations or everyday experiences	(1) the instructor or course materials help students make application of concepts to other content areas and everyday experiences	(1) no attempts are made to help students apply material to real life situations or to use concepts taught to explain familiar phenomena
II-A-10 Attention maintenance	teacher behavior which aids in keeping students' attention during the class presentation	(1) the instructor uses gestures and movement effectively when presenting material orally (2) the instructor uses a variety of classroom activities	(1) movement, gestures or verbal phrases are used in a distracting manner (2) little variety is found in classroom activities
II-A-11 Flexibility	deviation from the instructional plan as a result of in-class feedback from students (see 3.2.1)	(1) adjusts approach to overcome learning difficulties or lack of attention (2) shows a willingness to change class sessions to accommodate special interest areas (3) uses test results to alter instruction	(1) seems unaware of when students are having difficulty or not being attentive (2) appears to have no interest in student goals or interests (3) ignores test results which indicate poor comprehension of certain content
II-A-12 Closure	concluding the class session and/or the topic	(1) the instructor summarizes material covered in the lesson (2) subsequent topics are introduced	(1) no summarizing occurs (2) students are left to draw their own conclusions without evidence or feedback

ELEMENT	DEFINITION	EXAMPLES	
		DESIRABLE	UNDESIRABLE
II-A-12 Closure (continued)		(3) students are encouraged to provide closure for themselves	
II-B AFFECTIVE CHARACTERISTICS	interpersonally oriented teacher behaviors and attitudes		
II-B-1 Encouragement	the instructor's support of student efforts	(1) the instructor provides encouragement and help for class projects or other learning activities	(1) the instructor fails to offer any support for students while they are completing their assignments (2) the instructor never provides reinforcement for good work
II-B-2 Helpfulness	the instructor's willingness to provide outside help	(1) students feel comfortable asking for help (2) the instructor maintains regular office hours	(1) the instructor discourages students from asking for help (2) few or no office hours are kept by the instructor (3) instructor is generally unavailable to students outside of class hours
II-B-3 Concern	the instructor's apparent concern for student learning	(1) the instructor expresses concern that student learn	(1) the instructor presents the material with little concern about student understanding
II-B-4 Humor	the use of humor by the instructor	(1) the instructor uses humor effectively in class presentations and discussions to release tension and increase interest	(1) the instructor is unable to see humor in any situation (2) humor is often used at the expense of certain students

ELEMENT	DEFINITION	EXAMPLES DESIRABLE	EXAMPLES UNDESIRABLE
II-C INTERACTION	the exchange of ideas, discussions, etc., among students and the instructor		
II-C-1 Student participation	the creation of an atmosphere which encourages student discussion	(1) questions are sprinkled throughout class presentations (2) student's unsolicited comments and questions are encouraged by positive responses from the instructor	(1) no effort is extended by the instructor to encourage discussion (2) student questions are answered very abruptly (3) student opinions are often derogated
II-C-2 Questions of students	the questions which instructors ask of students during class (not exam questions)	(1) the instructor is able to choose questions to ask students which lead to thought, discovery of relationships, and lively discussion (2) adequate time is allowed for student response to questions (3) questions are phrased in a clear and concise manner	(1) the instructor's question can usually be answered with a "yes" or "no" response (2) too little time is allowed for students to respond to questions (3) questions are frequently vague and confusing
II-C-3 Facilitation	the instructor's control and guidance of discussion	(1) the instructor keeps the discussion on the topic (2) the instructor involves many students in the discussion	(1) the discussion often rambles on to unrelated topics (2) one or two persons are allowed to dominate the discussion
III. EVALUATION			
III-A STUDENT EVALUATION	the process of assessing student learning for feedback to students and grading		

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
III-A-1 Pre-assessment	assessment of student abilities and background for purposes of planning or revision in presentations	(1) the instructor determines the nature of students' background prior to initiating new topics (2) instructor determines prior course work of students during first week of course	(1) the instructor makes no attempt to determine students' background
III-A-2 Grading procedure	procedures by which the instructor assigns grades	(1) methods and procedures for assigning final grades are clearly spelled out (2) grade determination matches the importance given various objectives and topics in the course (3) procedures are adopted which minimize bias	(1) the methods for assigning course grades are a complete mystery (2) a small aspect of the course is given great weight in determining final grade, e.g., a single test or a paper (3) procedures are used which may unfairly discriminate among students
III-A-3 Test quality	the quality of teacher-made tests in terms of content, validity, reliability, clarity, difficulty, etc.	(1) teacher-made tests in the class cover appropriate content (2) tests are well written and seem to test the course objectives	(1) the tests cover material not relevant to the course (2) tests are poorly written with confusing items and seem unrelated to course objectives
III-A-4 Level	the match in terms of coverage and weighting of testing and grading procedures with the level at which course objectives are specified	(1) levels of intellectual and physical skills specified in objectives are represented in the assessment of student progress	(1) grades are determined almost solely by students' rote memorization

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
III-A-4 Level (continued)			(2) grades based solely on student synthesis of material, say by a single comprehensive paper or essay examination (may be appropriate for certain advanced courses)
III-A-5 Feedback	information provided to students on their progress in the course	(1) students are informed of their progress (2) comments and suggestions are included in grading tests and homework (3) papers and test grades are returned to students promptly	(1) students are given little feedback regarding class progress (2) grading procedures do not include clear messages to students of what they got wrong
III-B INSTRUCTIONAL EVALUATION	assessment of the effectiveness of the instructional process for modifying the instructional plan		
III-B-1 Student effort	seeking and using feedback from students concerning the instructional process	(1) the instructor uses student ratings or some other structured approach to get feedback from entire class on the conduct of the course (2) instructor is open to and encourages critical comments from students concerning the conduct of the course	(1) no effort is made to obtain student feedback in the class (2) instructor accepts criticism from students in a hostile and defensive manner

ELEMENT	DEFINITION	EXAMPLES	
		DESIRABLE	UNDESIRABLE
III-B-2 Student learning	using results of tests and assignments to assess the instructional process	(1) test results are used to determine where student misconceptions lie (2) test results are used to discover areas of inadequate student performance for redesigning instructional methods (3) quality of student work on assignments is used to assess instruction as well as students	(1) tests are viewed solely for evaluating students and not instructional revision
IV. STUDENT OUTCOMES			
IV-A INTELLECTUAL OUTCOMES	learning which emphasizes remembering recalling, solving problems, creating or re-ordering material through a conscious thought process		
IV-A-1 Knowledge	ability to remember, either by recognition or recall, the ideas, material, or phenomena presented in the course	(1) all or almost all of the students in the class demonstrate an ability to remember the basic facts or principles of the particular subject matter covered in the course	(1) many students complete the course without being able to remember important facts and principles

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
IV-A-2 Comprehension	knowing what is being communicated and being able to make use of the material or idea without necessarily relating it to other material or seeing its fullest implications	(1) most of the students understand important facts and principles and are able to translate these into their own words, interpret the meaning, and, perhaps, make predictions based on understanding of trends or tendencies	(1) many students can at best regurgitate course material but cannot use the material
IV-A-3 Application	applying previously learned concepts or materials to a new problem--using abstractions in particular and concrete situations	(1) the majority of the students can apply the correct or appropriate course concepts to problems or situations which have not been previously encountered	(1) a large number of students are unable to correctly apply course principles to problems or situations which are different from those contained in the course materials
IV-A-4 Analysis	breaking a set of material into its constituent parts and detecting the relationship of the parts to each other and to the whole	(1) a majority of the students are able to analyze material into constituent parts and detect relationships among these parts. Some specific activities illustrating this ability are the following: Distinguishing fact from hypothesis in a communication Identifying conclusions and supporting statements	(1) a majority of the students are unable to analyze material related to course content into constituent parts and detect relationships among these parts

ELEMENT	DEFINITION	EXAMPLES DESIRABLE	EXAMPLES UNDESIRABLE
IV-A-4 Analysis (continued)		Distinguishing relevant from extraneous material Noting how one idea relates to another Recognizing unstated assumptions	
IV-A-5 Synthesis	putting together of elements or parts so as to form a whole, involving the process of working with pieces, parts, elements, etc., and arranging them in such a way as to constitute a pattern or structure not clearly there before	(1) some students are able to draw upon elements from many sources and put these together in a structure or pattern not clearly there before. This ability may be illustrated by production of a unique communication, production of a plan or proposed set of operations, such as by designing a research project, or derivation of a set of abstract relations	(1) few or no students are able to create unique patterns or structures from elements of the course material
IV-B NON-INTELLECTUAL OUTCOMES	learning which emphasizes non-cognitive components such as feelings, and attitudes		

ELEMENT	DEFINITION	EXAMPLES: DESIRABLE	EXAMPLES: UNDESIRABLE
IV-B-1 Awareness	simply being conscious or aware of something--that a situation, phenomenon, object, or state of affairs should be taken into account	(1) all or almost all of the students are aware of certain values, perceptual orientations, aesthetic factors, etc. For example, an awareness of aesthetic factors in dress furnishings, architecture, city design, or good art	(1) many students complete the course without an awareness of important values or aesthetic factors within the course content
IV-B-2 Willingness to attend	willingness to take notice of a phenomenon and give it attention--willingness to tolerate a given stimulus, not to avoid it	(1) most of the students, given the opportunity to attend in a situation with relatively few competing stimuli, and will not actively avoid the phenomena. Examples include an appreciation of differing cultural patterns, an increased sensitivity to social problems, and maintaining attention when others speak on the topic	(1) many students actively avoid attending to any stimulus relating to the phenomena, be it a social problem, an area of intellectual pursuit, a particular art form, a period of history, or whatever
IV-B-3 Compliance	going beyond just attending by actively responding to certain phenomena when encouraged to do so	(1) most of the students will make an active response to the phenomena in reaction to suggestions or encouragement or in avoidance of some form of negative sanction. e.g., compliance with laboratory	(1) some of the students will attend to the phenomenon but are unwilling to do anything about it even under direct threat or encouragement

ELEMENT	DEFINITION	EXAMPLES DESIRABLE	EXAMPLES UNDESIRABLE
IV-B-3 Compliance (continued)		safety regulations. Viewing an educational TV program which is to be discussed in class	
IV-B-4 Willingness to respond	being sufficiently committed to exhibiting the behavior to do so voluntarily and not out of a fear of negative sanction	(1) many of the students voluntarily exhibit behaviors which are consistent with the values and attitudes promoted in the course, e.g., acquaint themselves with significant current issues in international, political, social, and economic affairs through voluntary reading and discussion	(1) many students are unwilling to take any action without explicit assignment from the instructor
IV-B-5 Valuing	internalizing the worth of a thing, phenomenon or behavior	(1) some of the students behave in such a manner and with sufficient consistency that they are perceived by others as holding the value and being willing to be so identified, e.g., continuing development of the ability to speak and write effectively	(1) very few or none of the students internalize the values of the course as a result of having taken it
IV-C PHYSICAL SKILL OUTCOMES	learning oriented toward muscular or motor skills		

ELEMENT	DEFINITION	EXAMPLES	
		DESIRABLE	UNDESIRABLE
IV-C-1 Recognition	being aware of what movements performance of the physical skill involves	(1) all students have become acquainted with proper execution of the skill (e.g., in nursing proper technique for giving injections can be recognized)	(1) too few students are able to discriminate good technique from poor technique
IV-C-2 Guided performance	being able to successfully perform the skill with some guidance or through imitation	(1) most of the students can successfully perform the skill with either some guidance from the instructor, by following step-by-step diagrams, of after watching someone else perform the skill, (e.g., biology students can dissect a frog following step-by-step procedures in text)	(1) too few students are able to perform the skill even with guidance
IV-C-3 Independent performance	being able to successfully perform the skill without external assistance	(1) many students can execute the skill without help and with an adequate result, e.g., an art student can successfully create a blockprint, a golfing student can hit a straight tee shot most of the time	(1) many students need to rely on some external assistance in order to have a successful result
IV-C-4 Skillful performance	being able to perform the skill in a highly polished, efficient, and skillful manner	(1) some of the students can perform the skill in a manner which is highly skillful and polished, which looks nearly perfect, and which has consistently successful results (e.g., professional-level dancing, exemplar surgical technique)	(1) few or no students are able to perform the desired skills in a highly efficient and aesthetically

Footnotes

[1]This work was partially supported through funds from the University of Washington Instructional and Faculty Development Board, Stephen Woods, Chair, in response to a proposal submitted by the University of Washington Faculty Senate Committee on the Evaluation and Improvement of Teaching, Albert Gordon, Chair.

[2]The authors wish to thank all those whose helpful suggestions contributed importantly to this work. Special thanks go to Robert Abbott, Joseph Clark, Debra Friedman, Albert Gordon, Laura Kalb, Arthur Lumsdaine, Clifford Lunneborg, Eugene Smith, and David Urby who reviewed an earlier draft.

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[4]Authors names are listed alphabetically; no precedence is intended.

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